

CLAIMS

WHAT IS CLAIMED IS:

SUBA4

1. A customizable application object adapted to bind to one of a plurality of customization objects, said customizable application object comprising:

a base object having:

internal logic executable on a computing device, said internal logic causing said computing device to perform one or more actions, said one or more actions including the signifying of one or more events; and

a public object model which includes identifiable references to said one or more events; and

a customization object having:

data or logic representative of said public object model; and

an event handler which receives the signified events from said base object, and which invokes at least one customized code sequence based on said data or logic.

2. The customizable application object of claim 1, wherein said customized code sequence comprises machine-executable binary code.

3. The customizable application object of claim 1, wherein said event handler invokes said customized code sequence further based on which of said one or more events is signified by said internal logic.

4. The customizable application object of claim 1, wherein said customization object further comprises a plurality of event handlers, each of said event handlers corresponding to one of said one or more events, each event handler

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logic which retrieves said customized code sequence from a database which stores a plurality of customized code sequences, the retrieval being based on a query.

logic which generates said query.

logic which derives information from attributes external to said customizable application object, whereby the retrieval is based at least in part on the derived information.

data or logic which links said customization object to said base object such that said event handler may respond to one or more events signified by said internal logic.

performing said one or more fixed actions;

1 for each of said variable actions, signifying an event;
2 selecting a custom code module from a plurality of custom
3 code modules, each of said custom code modules comprising one or more
4 executable components, each of said executable components corresponding to one of
5 said variable actions; and

6 in response to each of said events, invoking a first executable
7 component from the selected custom code module, said first executable component
8 corresponding to the variable action signified by the event.

10 10. The method of claim 9, wherein said selecting act comprises:

11 submitting a query to a database, wherein said database
12 contains said plurality of custom code modules; and

13 receiving the selected custom code module from said
14 database, or a reference to said custom code module.

16 11. The method of claim 10, further comprising the act of creating a
17 moniker which identifies a code module, wherein said query is based on said
18 moniker.

20 12. The method of claim 11, wherein said method is performed
21 within an operating environment, and wherein said act of creating a moniker further
22 comprises deriving information from said environment, said moniker being based at
23 least in part on said environment.

25 13. The method of claim 9, further comprising the act of loading the
26 selected code module into a memory on said computing device.

28 14. The method of claim 9, wherein said custom code module is in a

machine-executable\format.

15. The method of claim 9, further comprising the act of contacting a remote server to obtain the selected custom code module.

16. A computer-readable medium having computer-executable instructions to perform the method of claim 9.

17. A method of performing a task on a computing device, said task including a set of predetermined actions and at least one externally-definable action, said method comprising the acts of:

performing said set of predetermined actions;

generating a database query;

retrieving, based on said database query, a code module from a database, said code module including a first set of instructions which perform said externally-definable action;

loading the retrieved code module; and

invoking said first set of instructions.

18. The method of claim 17, further comprising the act of generating a moniker string which identifies a code module, and wherein said act of generating a database query comprises basing said database query on said moniker string.

19. The method of claim 18, wherein said moniker string is based at least in part on fixed data.

20. The method of claim 18, further comprising the act of deriving information from an environment in which said predetermined actions are

performed, wherein said moniker string is based at least in part on the derived information.

21. The method of claim 17, wherein said database provides a pointer to said code module, and wherein said act of retrieving said code module comprises following said pointer.

22. The method of claim 17, further comprising the act of generating an event, wherein said act of invoking said first set of instructions is performed in response to the generating of said event.

23. The method of claim 17, wherein said code module comprises a plurality of sets of instructions, and wherein said method further comprises the act of selecting a set of instructions from among said plurality of sets of instructions.

24. The method of claim 23, further comprising the act of generating a predetermined one of a plurality of events, wherein the selection of a set of instructions from among said plurality of sets of instructions is based on which one of said plurality of events is generated.

25. The method of claim 17, wherein said code module is in a machine-executable format.

26. A computer-readable medium having computer-executable instructions to perform the method of claim 17.

27. A system for performing a customizable task comprising:
a database having query processing logic which receives a

query specifying identifying data and which retrieves items from said database based on said query, said database storing a plurality of custom code modules, said database having a directory which indexes each of said custom code modules by identifying data; and

a software object having:

logic which performs one or more predetermined actions; and

logic which requests information from said database
based on first identifying data;

logic which receives a custom code module from said database in response to the request; and

logic which loads the received custom code module for execution.

28. The system of claim 27, wherein said software object further comprises logic which generates an event, wherein said custom code module contains instructions which execute in response to the generation of said event.

29. The system of claim 28, wherein said event is a member of a group of events, wherein said custom code module includes one or more components each of which corresponds to one of said group of events, and wherein said system further comprises logic which invokes one of said components based on which of said events is generated.

30. The system of claim 27, wherein said software object further comprises logic which invokes the execution of said custom code module or portion thereof.

31. The system of claim 27, wherein said software object further comprises logic which generates a moniker string that identifies said custom code module, and wherein said first identifying data includes or is based on said moniker string.

32. The system of claim 31, wherein said software object is executable in an operating environment, wherein said logic which generates a moniker string includes logic which retrieves one or more data from said operating environment, and wherein said moniker string is based at least in part on said one or more data.

33. The system of claim 32, wherein said one or more data include the identity of a user or organization.

34. The system of claim 27, wherein said database further includes:
logic which receives said first identifying data, generates a database query based on said first identifying data, and forwards the generated query to said query processing logic.

35. The system of claim 27, wherein said database is accessible to said software object via a remote access protocol.

36. The system of claim 35, wherein said database is located remotely from a computing device that executes said software object.

37. The system of claim 27, wherein said database stores said plurality of custom code modules in machines-executable format.

1 38. A method of customizing a software object which invokes one of
2 a plurality of actions, said method comprising the acts of:

3 creating a first set of computer-executable instructions which
4 performs a first of said plurality of actions;

5 storing said first set of computer-executable instructions in a
6 database, said first set of computer-executable instructions being indexed in said
7 database by first identifying data, said database being communicatively coupleable
8 to said software object, said software object being adapted to query said database
9 and to invoke computer-executable instructions stored in said database;

10 creating a second set of computer-executable instructions
11 which performs a second action; and

12 storing said second set of computer-executable instructions in
13 said database, said second set of computer-executable instructions being indexed in
14 said database by second identifying data,

15 whereby said software object may query said database based on identifying data and
16 invoke either said first or said second set of computer-executable instructions
17 according to which of said sets of computer-executable instructions satisfies said
18 query.
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20 39. The method of claim 38, wherein each of said first and second
21 sets of instructions comprises a plurality of components, each of said components
22 corresponding to one of a plurality of events generated during the operation of said
23 software object.
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25 40. The method of claim 38, further comprising the act of
26 generating, for each of said first and second sets of computer-executable
27 instructions, a moniker string based at least in part on the identity of an entity on
28 whose behalf the software object will invoke the set of computer-executable

instructions.

41. The method of claim 40, wherein said identity comprises the name of an organization.

42. The method of claim 41, wherein said identity comprises the name of a user.

43. The method of claim 38, further comprising the act of compiling each of said first and second sets of computer-executable instructions prior to their storage in said database.

44. In a software object executing within an operating environment, a method of locating a code module comprising the acts of:

ascertaining one or more attributes of said operating environment external to said software object;

generating a database query based at least in part on said one or more attributes;

querying a database using the generated database query, said database storing one or more code modules; and

receiving from said database either a first of said one or more code modules or a pointer to said first code module.

45. The method of claim 44, wherein said software object comprises fixed data identifying said software object, and wherein act of generating a database query is further based on said fixed data.

46. The method of claim 45, wherein said fixed data comprises the

1 name of said software object or of a sub-object thereof.

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3 47. The method of claim 44, wherein said one or more attributes
4 include the identity of an entity associated with said operating environment.

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6 48. The method of claim 44, further comprising the act of executing,
7 or invoking the execution of, the retrieved code module.

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9 49. A computer-readable medium having computer-executable
10 instructions to perform the method of claim 44.

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12 50. A system for performing a customizable task comprising:
13 means for performing one or more predetermined actions;
14 means for signifying one or more events;
15 means for storing a plurality of code modules;
16 means for loading a selected one of said plurality of code
17 modules; and
18 means for invoking at least a portion of the selected code
19 module in response to said one or more events.

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